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TREASURE STATE HEALTH

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Whooping Cough Is A Serious Childhood Disease

Whooping cough, scientifically known as pertussis, is a disease of children everywhere. It attacks them regardless of race, climate, or geographic location. Large communities generally have the highest number of cases in late winter or early spring, small communities show a variable incidence over the year.

Cause

Whooping cough is caused by a bacillus known as the pertussis bacillus. The organism is spread by direct contact with an infected person, indirectly by contact with articles freshly soiled with discharges from infected persons, and by droplet spread. Droplet spread is from the coughing and "whooping" associated with the disease.

The incubation period, or time between being exposed to an infected person and actually coming down with the disease is almost uniformly within 10 days, although it may range from 7 to 21 days.

Whooping cough is predominantly a childhood disease, with most of the cases occurring in children under seven years of age. The disease affects the trachea and bronchi, and is characterized by violent coughing. Each series of coughs has many coughs without intervening inhalations, followed by a characteristic crowing or whooping sound. This is the "whoop" of whooping cough. There is frequently an expulsion of clear mucus following the seizure of coughing.

Susceptibility to the disease is general and there is no evidence of the child acquiring immunity from the mother at birth. Although there are not many deaths from the disease, those that do occur are usually in children under one year of age.

Prevention

Immunization against whooping cough should begin at six weeks to two months of age. The pertussis vaccine is generally mixed with diphtheria and tetanus toxoids in the familiar diphtheria-Pertussis-Tetanus-triple vaccine. Three doses of the vaccine are necessary for the primary series. Many physicians recommend a booster before the child enters school. The pertussis vaccine is generally not given after 6 years of age.

"The Image of Public Health" is the title of a series of articles which will appear in this publication during the next several months, the first appearing below. Both professional health workers and interested citizens are being asked to express their views on public health for this series.

THE IMAGE OF PUBLIC HEALTH

By R. J. Losleben, Malta
President, Montana State Board of Health

While president of the State Board of Pharmacy, I served as a member of the State Board of Health for a two-year term from 1946-1948. Then in 1953, the Governor appointed me to a seven-year term, which at first I declined for I could not see how I could perform any particular service to the people of Montana as a member of this Board.

However, I was prevailed upon by the then Lt. Governor and the officers of the Montana Pharmaceutical Association to accept the appointment. After attending a few meetings I realized that there were many opportunities for useful service. Membership on the Board had been changed by the 1949 legislature with the result that it was no longer a "closed corporation", but rather was composed of a group of citizens with varied backgrounds and interests. All facets of life in Montana which affect the health of our citizens are of concern to this Board.

Board Responsibilities

The responsibilities allotted to the Board under Montana law are indeed broad and varied. The purity of the water we drink, the air we breathe and the food we eat, the standards for our school buildings, hospitals and nursing homes, the cleanliness of our public restaurants and the protection of our streams are just some of the areas of concern. Many of the acute communicable diseases that threatend our communities in the past, such as typhoid or smallpox, are now almost rarities, but it takes constant vigilance to prevent epidemics and prompt action to control them if one threatens. And the new conditions have brought forth new health problems in the vital function of disease control.

The Board has the duty to inquire into the causes of mortality and the influence of locality, climate, employment and other conditions influencing the health of the people of Montana. It collects and makes public the vital statistics of our state, and is the agency charged with the responsibility of keeping the people up to date on modern developments in the field of health, in which knowledge increases so rapidly today.

To carry out these varied duties, the Board employs highly specialized professional persons, and its policies are set cooperatively with advisory boards and committees which include represenatives of all the industries and professions concerned with special aspects. Underlying all the activities of the Board is the general philosophy of a "stitch in time" —needless suffering and taxpayers dollars can be saved by applying intelligent preventive measures.

The concern of the Board is limited, of course, to the aspect of protecting the public. It is not concerned, for example,

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ROCKY MOUNTAIN LABORATORY STUDYING CHRONIC DISEASES

Carl Eklund, M.D., and Wiliam Hadlow, D.V.M., are studying "Viruses in Relation to Chronic Disease" at the Public Health Service Laboratory in Hamilton, Montana. Dr. Eklund is the Chief of Arbo and Chronic Viruses and Dr. Hadlow is Chief of the Comparative Pathology section. Dr. Eklund prepared a paper on their work which was presented at the annual meeting of the Montana Public Health Association in Billings, this spring.

It was explained that their study to date is concerned with two virus diseases of sheep and two of mink which have features similar to the chronic diseases of human beings.

The Problem

The "chronic diseases" such as chronic neurological disorders, cardiovascular disease such as rheumatoid arthritis and lupus erythematosus, and mental disorders are the major unsolved disease problems of the present. They have a profound effect economically and emotionally because of their long duration, lack of effective treatment and costly care needed.

Past successes in the control of diseases have involved acute and chronic infectious disease where the causative organism is readily isolated and the manner of spread determined, or where characteristic disease syndromes follow exposure to a toxic agent, such as lead or silica dust, or where well defined disease syndromes follow some dietary lack. However, another approach must be used in finding methods to prevent chronic diseases.

Procedure

Therefore, investigators in chronic disease problems are forced either to try to produce an analogous experimental disease among laboratory animals or to find spontaneous animal disease with similar features. As an example of the latter approach, leukemias and malignant tumors in mice and chickens have received much study because they resemble leukemias and tumors in man. So if viruses cause leukemia in mice and are found in the blood of leukemic mice, viruses may cause human leukemia also and may be found in the blood of leukemic human beings. In the case of certain tumors of mice caused by viruses, the viruses transform certain normal cells into malignant cells but then disappear so that no virus can be found in the tumors. Such tumors, however, contain new antigens apparently derived from the virus and so indicate the origin of the tumor cells. This possibility must then be considered with human tumors from which virus cannot be isolated.

A similar course of investigation is one approach to the study of certain chronic diseases of the central nervous system, the lungs, liver, kidneys and blood vessels of man. The investigators believe that if there are viral diseases of animals characterized by very long incubation periods, protracted clinical course and pathological findings characteristic of so-called "degenerative disease" and "autoimmune disease", similar disease states will be found in the human population.

Findings

To date the investigators have found through their study of the four diseases

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General Medical Bacteriology Training Course Completed

This spring a training course in "Laboratory Methods in General Medical Bacteriology" was held at Montana State University in Bozeman. This course was sponsored by the Microbiology staff of the State Board of Health and the Department of Bacteriology at the State University with assistance from the Communicable Disease Center of the PHS in Atlanta, Georgia.

The course was attended by 17 medical technicians representing as many laboratories from each geographic area of the state. Its purpose was to update medical technologists in standard laboratory procedure in medical bacteriology for the isolation and identification of pathogenic organisms from various types of materials. Recent developments in

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Board Adopts . . .

REGULATIONS FOR SWIMMING POOLS

The State Board of Health has adopted regulations relating to public swimming pools and bathing places in conformity with Senate Bill No. 85 adopted by the 1965 legislature. This law was enacted because the public health and safety requires control and regulation of facilities "serving the public to prevent endangering the health of Montana citizens by improperly designed and operated swimming pools."

The regulations incorporate the most recent recommendations of health authorities for swimming pool design, operation and maintenance.

Plans to be Submitted

Plans for all new swimming pools and alterations made to existing pools must be submitted to the State Board of Health for review and approval prior to the beginning of construction. When the plans are submitted for review, information must be included which explains the source of water, discharge of pool drainage, design details, structural stability, bath house facilities and equipment.

Specific criteria are set forth in the regulations as to water quality, spacing of water inlets and outlets, pool depth, area of walkways, bather loadings, location of ladders and steps, and depths necessary for diving.

Detailed information is presented relating to the recirculation system. This includes pumping and filtration rates, types of filter, design data for the different types of filters and the requirements for disinfection equipment and chemical feeders.

Requirements as to size of dressing rooms and the number of showers and toilet facilities are set forth in the regulations. The number of showers and fixtures required is based on the anticipated bathing load for the pool and is presented in table form.

Life Saving & Disease Control Measures

Information on the necesary life saving equipment and the requirements for supervision of the bathers are described. Regulations relating to health protection and communicable disease control are spelled out. For instance, the regulations state that swimmers suspected of having infectious diseases, coughs, cold sores, or those wearing bandages may be excluded from pools under certain conditions.

Record Keeping

The operators of swimming pools are required to keep daily records on the operation of the pool. This reporting includes the amount of disinfectant residual, the pH, maintenance procedures, and other data as may be required. The State Board of Health staff and/or the local health officer are authorized to conduct swimming pool inspections.

All communities or persons planning new swimming pools or alterations on existing pools should secure a copy of the new regulations before proceeding with the design or construction of the pool.

Copies of the regulations may be secured from the State Board of Health.

MONTANA SURVEY SHOWS IMMUNIZATION LEVELS LOW

Immunization surveys conducted by the Board of Health's Vaccination Assistance Project in certain areas of the State show that segments of the population are not adequately protected against certain communicable diseases. The surveys were conducted last winter in 16 counties and five cities of the State. Interviews were conducted with families having children under age 5 in the household. All households contacted were chosen on a random sampling basis.

Immnization data were obtained for a total of 6,209 persons. If there was a child under 5 years of age in the household, information was obtained on all members of the household. The interviews were conducted by the VAP staff, public health nurses, and volunteer nurses. Interview questions and technics were adapted from those developed by the Communicable Disease Center, Atlanta, Georgia.

Following completion of the surveys in each area, preliminary tabulation was made of the data, and a summarization of information was sent to each of the 14 component medical societies. Following study and analysis of these preliminary data, community programs will be developed to encourage high levels of immunization.

Preliminary data for polio immunizations show a range of from 53.7% to 72.9% of the particular age groups protected. Adequate protection for polio, for the purposes of classifying the survey data, was defined as a completed series of the Sabin Oral Vaccine, or a series of Salk Vaccine plus a booster within one year.

Taking this to be representative of state-wide immunization levels against polio, then about 69% of the people in Montana are adequately protected against polio. It is recommended that community immunization levels should be much higher than this, preferably in the range of 90% to 95% protected. If this is so, then there is a need for improvement in levels of protection against polio throughout the State.

Protection Against DPT & DT

Information was obtained for levels of protection against diphtheria, whooping cough, and tetanus in children, and diphtheria and tetanus in adults. Children from 1-4 years were well protected with primary and booster immunizations. Children in the 5-14 age bracket were relatively highly immunized with a basic series for DPT, but only about one-half of them had a booster within three years. Boosters are necessary to maintain high levels of protection against these diseases.

Persons over 15 years of age were poorly protected against diphtheria and tetanus. In the 15-39 age bracket, only 13.1% had boosters within 3 years, and only 7.4% of persons 40 and over had been immunized with a booster within three years.

Protection levels against Diphtheria, Whooping Cough and Tetanus show need for improvement. Education of the public to the need for boosters against diphtheria and tetanus is definitely needed. Too many people think that because they are once immunized against these diseases that they are protected. There is a certain fallacy to this because boosters are needed to keep the level of protection at high level, otherwise there is not adequate immunity against these diseases.

Protection Against Smallpox

Smallpox vaccination also falls into this category. Most people think that one vaccination either as a child, or in the military, will be adequate protection for life. This is not so; booster vaccinations are necessary every four or five years to maintain high levels of immunity. The data from the survey show high percentages of persons having had at least one vaccination, the pecentages of persons having had a re-vaccination in the last few years is low.

About 76% of the people interviewed had been vaccinated against smallpox, once in their lifetimes, but only 30.5% had been vaccinated within 4 years. The number of children between 1-4 years of age who have ever been vaccinated is 57.5%, and 54.2% of the total number of children who had been vaccinated within 4 years. This indicates that parents are not getting their children vaccinated as infants. They are waiting until just before starting school to get their children vaccinated. This is leaving a great percentage of infants and preschool children unprotected against smallpox.

Intensified Education Needed

The fourteen component medical societies of the Montana Medical Association are studying the survey results for their areas. The advisory group to the VAP composed of a physician from each of the medical societies will meet early in the Fall to review activities to date and suggest future activities for the program. It is anticipated that educational activities aimed at getting more people in to see their family physicians for immunizations will be of prime importance in future activities.

There is a lack of information regarding the need for boosters to all the immunizations among the people interviewed in the surveys. The need for boosters, and the importance of starting immunizations in the first few months of an infant's life are areas of information that must be understood. Materials are under development aimed at getting this information to parents.

Receipt of green plastic cards from SBH indicate infant and pre-school basic immunizations completed

Suggested schedules of immunizations are being sent to parents of children along with the birth notification. This is done when the child is three months old.

Other materials being utilized include the immunization status card and plastic record card, which are discussed in detail in the April 1965 edition of this publication.

MRS. O. H. MANN REAPPOINTED TO BOARD OF HEALTH

Mrs. O. H. Mann, Missoula, has been reappointed to a seven-year term on the Montana State Board of Health by Governor Tim Babcock. Mrs. Mann was first appointed to membership on the Board in 1961. Current members of the Board with their present terms of office are:

	Appointed	Term Ends
Bowden, Paul H., D.D.S. Butte	7/62	6/69
Gould, George M., M.D. Kalispell	6/64	6/66
Knapp, R. D., M.D., Wolf Point	7/64	6/71
Losleben, J., Malta, President	7/60	6/67
Ellis, Mrs. Richard, Great Falls	12/63	6/68
Mann, Mrs. O. H., Missoula	7/65	6/72
Pratt, S. C., M.D., Miles City, Vice-President	1/63	6/70

John S. Anderson, M.D., Executive Officer serves as the Secretary of the Board.

Kenneth J. Lampert, M.D. Granted M.P.H. Degree

Kenneth J. Lampert, M.D., Missoula City-County full-time health officer, has resumed his duties in Missoula following a 10-month educational leave. Dr. Lampert was granted a Master of Public Health Degree from the University of Pittsburgh's School of Public Health.

M.P.H. degrees are awarded following the completion of an academic year of graduate work specializing in public health. Basic public health courses are taken by all disciplines. Among them are physicians, sanitarians, nurses, health educators, engineers, statisticians, etc., then each individual selects special courses applicable to his field of endeavor. Dr. Lampert's special courses were in public health administration and environmental health including air pollution and occupational health.

IMAGE OF PUBLIC HEALTH

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with the decor or the bill of fare of our restaurants, or with the individual treatment of individual patients. It is concerned with the setting of standards, with the examination of evidence of cause and effect, and with the institution of measures which will prevent future health problems--as in the case of PKU. The Testing of all Montana babies for this condition shortly after birth will now prevent the mental retardation which formerly would have been inevitable in those children with undetected phenylketonuria.

The association with my fellow members of the Board in carrying out our responsibilities to the people of Montana has been a stimulating experience for me, and we feel rewarded by the knowledge that we have contributed to maintaining healthful living conditions in our State.

BACTERIOLOGY COURSE

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laboratory diagnostic techniques in medical bacteriology were covered.

Miss Edith Kuhns, Director and Milton Brown, Assistant Director of the SBH microbiology laboratory served in a coordinating and teaching capacity. The University department staff participated in the instruction, provided staff assistance and furnished the laboratory facilities for the course.

The Communicable Disease Center of the PHS provided a top-ranking microbiologist, Elaine Updyke, Sc. D., and her assistant Sylvia Bartes, to give lectures and teaching instruction.

The course was well received and the participants made a request that annual courses be conducted in other areas of diagnostic laboratory procedures.

ROCKY MT. STUDY

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in sheep and mink that: (1) the virus infection may express itself in a very slow and indirect manner; (2) the incubation period may cover a period of many months or years, the onset of the disease may be very insidious and difficult to establish and the clinical course very prolonged. An appreciable portion of an animal species' usual life span is taken up by the development of the disease. (3) There can be complete absence of fever or any clinical, pathological or laboratory findings suggestive of an infectious process. (4) In these slow virus infections there appear to be first a proliferation of cells and subsequent to and dependant on this proliferative process one finds degeneration of cells essential to life. (5) One may expect that viruses which produce such indolent infections differ in some manner from the viruses which cause acute infections. To date it appears that they are characterized by unusual heat stability and resistance to formalin.

Drs. Eklund and Hadlow hope that with the experience gained in observing these four animal diseases caused by viruses they will be able to begin the study of chronic diseases in humans.

In 1964 . . .

ACCIDENTAL DEATHS INCREASED

There was a 32.5% increase in the number of accidental deaths in 1964 as compared with 1963, John Wilson, director of hte Board's division of Records and Statistics, has announced. He said the number of these deaths rose from 517 in 1963 to 685 in 1964, or 168 more people died from accidents.

The following table shows the cause of accident, the number of persons involved for each year and the percent of increase.

Cause	1963	1964	Increase by Number	Increase by Percent
Motor vehicle traffic deaths	223	263	40	18%
Motor vehicle non-traffic deaths	8	14	6	75%
Small boat accidents	4	8	4	100%
Drowning	29	34	5	17%
Aircraft*	14	38	24	171%
Accidental poisoning by solids or liquids	5	11	6	120%
Falls	81	111	30	37%
Fire	21	34	13	62%
Firearms	28	30	2	7%

Progress in Accident Prevention

"Bleak" is the way Mr. Wilson evaluates accident prevention in Montana in 1964.

*Nine of the 1964 aircraft deaths were personnel in military aircraft; nine were occupants of commercial "transport" aircraft.

COMING EVENTS—

Sept. 9-11—Western Tuberculosis Conference, Jackson Hole, Wyoming.

Sept 22-24—Tenth Annual Conference "Physicians and Schools", Chicago.

Sept. 23-25—Montana Medical Association Annual Meeting, Great Falls.

Oct. 6-8—Montana Nurses Association Annual Meeting, Bozeman.

Oct. 18-20—Montana Rehabilitation Association Annual Meeting, Kalispell.

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